

\* NOTICES \*

JP 2003-2008/2A

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the air bag equipment for side \*\* of an automobile.

[0002]

[Description of the Prior Art] There are some which formed the air bag equipment for a side collision in the side roof rail of the car-body upper part of an automobile (refer to the patent No. 3125729 official report as a similar technique). This kind of air bag equipment has folded up and contained the air bag of die length before and after reaching [ from a front seat ] a backseat in the vertical direction. The folded-up air bag is covered by headlining from a vehicle interior-of-a-room side.

[0003] From the center of abbreviation of a side roof rail, the center pillar prolonged to the bottom is formed and the garnish is attached in the vehicle interior-of-a-room side of this center pillar. Although the upper limit section of this garnish and the upper limit section of headlining will be mutually overlapped so that a level difference may not arise, it will not be specially connected by them. It is because the free deformation by the side of the vehicle interior of a room of the lower limit section of headlining at the time of expansion of an air bag is permitted.

[0004] That is, pushing the lower limit section of headlining open to a vehicle interior-of-a-room side, the air bag which expanded by the gas of an inflator at the time of the side collision of an automobile overcomes the upper limit section of a garnish to a vehicle interior-of-a-room side, and develops in the shape of a curtain towards a lower part. And the developed air bag intervenes between a car-body side attachment wall and crew, and protects the crew head of order.

[0005]

[Problem(s) to be Solved by the Invention] However, although the air bag which expanded pushes the lower limit section of headlining open to a vehicle interior-of-a-room side and develops below if it is in such a Prior art The garnish is prepared in the part corresponding to a center pillar at the vehicle interior-of-a-room side. It deformed so that it might separate greatly to a center pillar empty vehicle interior-of-a-room side by the impact with which the upper limit section of this garnish joins a car-body side face at the time of a collision, and the clearance for air bag expansion formed between the upper limit section of this garnish and the lower limit section of headlining was narrowed partially. Therefore, there is a possibility that the expansion rate to the lower part of the whole air bag may fall, according to the deformation by the side of the vehicle interior of a room of the upper limit section of such a garnish.

[0006] The impact at the time of a collision is absorbed and it was made for the upper limit section of a garnish not to separate from a center pillar greatly conventionally as a cure for that by the space which secured spacing of a garnish and a center pillar greatly and secured it greatly. Therefore, the location of a garnish changed into the condition of having projected to the vehicle interior-of-a-room side, and was pressing crew's vehicle indoor tooth space.

[0007] This invention is made paying attention to such a Prior art, and offers the air bag

equipment for side \*\* of the automobile in which it is not necessary to locate the location of a garnish to a vehicle interior-of-a-room side specially.

[0008]

[Means for Solving the Problem] Invention according to claim 1 folds up an air bag along with the side roof rail of a car body, contains it in the condition, and in headlining the contained air bag from a vehicle interior-of-a-room side with a wrap The vehicle interior-of-a-room side of the pillar prolonged from a side roof rail to a lower part is covered with the garnish which has the upper limit section in the location corresponding to the lower limit section of headlining. It is air bag equipment for side \*\* of the automobile developed in the shape of a curtain towards a lower part at the time of the side collision of an automobile while the air bag which expanded pushes the lower limit section of headlining open to a vehicle interior-of-a-room side. The leg prolonged in a pillar side was formed near the upper limit section of said garnish, and the point of this leg was fixed to the pillar.

[0009] Since near the upper limit section and the pillar of a garnish will be connected through the leg according to invention according to claim 1, even if a pillar gets an impact of a side collision, the clearance formed between headlining which the upper limit section of a garnish did not separate from a pillar, and was pushed open with the upper limit section of a garnish is secured widely, and its expansion rate to the lower part of an air bag improves. Since it is not necessary to locate the location of a garnish to a vehicle interior-of-a-room side specially, crew's vehicle indoor tooth space is not pressed.

[0010] Invention according to claim 2 \*\*\*\*\* (ed) the bracket with which the wrap ups-and-downs section was formed in the fixed point to the pillar of the point of the leg in the air bag bottom in the upper part.

[0011] According to invention according to claim 2, since the bracket which makes the expansion force of an air bag act downward was \*\*\*\*\* (ed) to the fixed point to the pillar of the point of the leg, the attachment to the pillar of the leg and a bracket can be managed with once to it, and working efficiency improves to it.

[0012] Invention according to claim 3 formed the leg in the height location which contacts the lower limit section of headlining while it makes the upper limit section of a garnish project more nearly up than the leg and made this upper limit section engaged from an in-the-car side to the lower limit section of headlining.

[0013] In order according to invention according to claim 3 to regulate the location in the horizontal direction of the lower limit section of headlining from the upper limit section of a garnish and to regulate the location in a perpendicular direction by the leg, the location of the lower limit section of headlining is stabilized.

[0014]

[Embodiment of the Invention] Hereafter, 1 suitable operation gestalt of this invention is explained based on drawing 1 - drawing 4 . [0015] Drawing 1 is drawing which looked at the upper part of an automobile from the vehicle interior-of-a-room side, and shows the condition that the air bag 1 developed. the inside of drawing 1 , and a sign 2 -- a front pillar -- said -- 3 - a center pillar -- said -- 4 shows the rear pillar. The side roof rail 5 is formed in the upper part of each pillars 2, 3, and 4 along with the cross direction. Only as for the part corresponding to the center pillar 3, only the inner part is prepared although this side roof rail 5 has closed section structure (illustration abbreviation) which consists of an inner and an outer fundamentally.

[0016] It applies to a rear pillar 4 from a front pillar 2, and it is attached in this side roof rail 5 where an air bag 1 is folded up in the vertical direction. As for the air bag 1, several places of the upper limit section are being fixed to the side roof rail 5 through the ruble implement 6. And a gas inlet 7 is formed in the up back end of an air bag 1, and the gas of the inflator which is not illustrated from there can be introduced now into it.

[0017] Moreover, sewing of the end is carried out to an air bag 1 at the front end of an air bag 1, and the \*\*\*\*\* strap 8 is formed for the other end in the front pillar 2. This strap 8 is for pulling an air bag 1 to a before side, and helping the expansion to a cross direction, in case the hole 9 of the front end of an air bag 1 is penetrated and an air bag 1 develops downward.

[0018] As for the air bag 1 which was folded up and attached in the side roof rail 5, the vehicle

interior-of-a-room side is covered with headlining 10. Lower limit section 10a of this headlining 10 is engaging with the anti-vehicle interior-of-a-room side of upper limit section 11a of the garnish 11 attached in the vehicle interior-of-a-room side of the center pillar 3, and he is trying for lower limit section 10a not to project in a vehicle interior-of-a-room side.

[0019] In the lower part, the leg 12 prolonged towards the center pillar 3 side is formed in the location which contacts lower limit section 10a of headlining 10 a little rather than upper limit section 11a in this garnish 11. The point 13 of this leg 12 is bent to the up side, and is being fixed by the bolt nut means 14 to the center pillar 3. Since the migration by the side of the vehicle interior of a room of lower limit section 10a of headlining 10 is regulated by upper limit section 11a of the fixed garnish 11 and migration in the lower part of lower limit section 10a is regulated, the location of lower limit section 10a of headlining 10 is stabilized.

[0020] Moreover, between the point 13 of this leg 12, and the center pillar 3, the bracket 16 with which the wrap ups-and-downs section 15 was formed in the upper part in the air bag 1 bottom is \*\*\*\*\*ed. Therefore, the attachment to the center pillar 3 of the leg 12 of a garnish 11 and a bracket 16 can be managed with once, and working efficiency improves. In addition, the piece 17 of attachment is formed in the upper limit of this bracket 16 at the both sides of the ups-and-downs section 15, and this piece 17 of attachment is also being fixed to the center pillar 3.

[0021] Next, the expansion condition of this air bag 1 is explained based on drawing 4. If an automobile causes a side collision, the inflator which is not illustrated will operate and gas will be introduced in an air bag 1 from a gas inlet 7. The air bag 1 into which gas was introduced expands from the upper part side fixed to the side roof rail 5. And when an air bag 1 expands in the space between the side roof rail 5 and headlining 10, lower limit section 10a of headlining 10 is pushed open at a vehicle interior-of-a-room side, and the clearance S for developing the air bag 1 whole below is formed.

[0022] Since near upper limit section 11a and the center pillar 3 of a garnish 11 will be especially connected through the leg 12 with this operation gestalt even if it is in a corresponding point with the center pillar 3 to which Clearance S tends to become narrow, Even if the center pillar 3 gets an impact F of a side collision, the clearance S which upper limit section 11a of a garnish 11 does not separate from the center pillar 3, and is formed between lower limit section 10a of headlining 10 is secured widely, and its expansion rate to the lower part of an air bag 1 improves. And since the ups-and-downs section 15 of a bracket 16 has closed the air bag 1 bottom, the expansion force of an air bag 1 can be made to act downward, and an expansion rate improves further.

[0023] The air bag 1 developed below becomes curtain-like, enters between crew and a car-body side attachment wall, and protects especially crew's head. Thus, since the garnish 11 of this operation gestalt does not deform so that it may separate from the center pillar 3 at the time of a collision, it does not need to locate the location of a garnish 11 to a vehicle interior-of-a-room side specially like before, and does not press crew's vehicle indoor tooth space.

[0024]

[Effect of the Invention] Since near the upper limit section and the pillar of a garnish will be connected through the leg according to this invention, even if a pillar gets an impact of a side collision, the clearance formed between headlining which the upper limit section of a garnish did not separate from a pillar, and was pushed open with the upper limit section of a garnish is secured widely, and its expansion rate to the lower part of an air bag improves. Since it is not necessary to locate the location of a garnish to a vehicle interior-of-a-room side specially, crew's vehicle indoor tooth space is not pressed.

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CLAIMS

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[Claim(s)]

[Claim 1] Along with the side roof rail of a car body, fold up an air bag, contain in the condition, and in headlining the contained air bag from a vehicle interior-of-a-room side with a wrap The vehicle interior-of-a-room side of the pillar prolonged from a side roof rail to a lower part is covered with the garnish which has the upper limit section in the location corresponding to the lower limit section of headlining. It is air bag equipment for side \*\* of the automobile developed in the shape of a curtain towards a lower part at the time of the side collision of an automobile while the air bag which expanded pushes the lower limit section of headlining open to a vehicle interior-of-a-room side. Air bag equipment for side \*\* of the automobile characterized by having formed the leg prolonged in a pillar side near the upper limit section of said garnish, and fixing the point of this leg to a pillar.

[Claim 2] Air bag equipment for side \*\* of the automobile characterized by \*\*\*\*\*(ing) the bracket with which it is air bag equipment for side \*\* of an automobile according to claim 1, and the wrap ups-and-downs section was formed in the fixed point to the pillar of the point of the leg in the air bag bottom in the upper part.

[Claim 3] Air bag equipment for side \*\* of the automobile characterized by forming the leg in the height location which contacts the lower limit section of headlining while being air bag equipment for side \*\* of an automobile according to claim 1 or 2, making the upper limit section of a garnish project more nearly up than the leg and making this upper limit section engaged from an in-the-car side to the lower limit section of headlining.

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] The vehicle indoor perspective view showing the condition that the air bag concerning 1 operation gestalt of this invention developed downward.

[Drawing 2] The sectional view of the center pillar upper part showing the condition of having folded up and contained the air bag of drawing 1 .

[Drawing 3] The perspective view showing the upper bed section and the bracket of a garnish of drawing 1 .

[Drawing 4] The sectional view of drawing 2 showing the condition that the air bag of drawing 2 developed downward.

[Description of Notations]

1 Air Bag

3 Center Pillar

5 Side Roof Rail

10 Headlining

10 Soffit Section

11 Garnish

11a Upper bed section

12 Leg

13 Point

15 Ups-and-Downs Section

16 Bracket

F Impact

S Clearance

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[Translation done.]

【発明の効果】この発明によれば、ガーニッシュの上端部付近とビラーとが脚部を介して連結された状態になるため、ビラーが側面衝突の衝撃を受けても、ガーニッシュの上端部がビラーから離れることはなく、ガーニッシュの上端部と、押し開かれたヘッドライニングとの間に形成される隙間は広く確保され、エアバッグの下方への展開速度が向上する。ガーニッシュの位置を特別に車室内側へ位置させる必要がないため、乗員の車室内スペースを圧迫することがない。

【図面の簡単な説明】

【図1】この発明の一実施形態に係るエアバッグが下向きに展開した状態を示す車室内斜視図。

【図2】図1のエアバッグを折り畳んで収納した状態を示すセンタビラー上部の断面図。

【図3】図1のガーニッシュの上端部とブラケットを示す斜視図。

\*【図4】図2のエアバッグが下向きに展開した状態を示す図2相当の断面図。

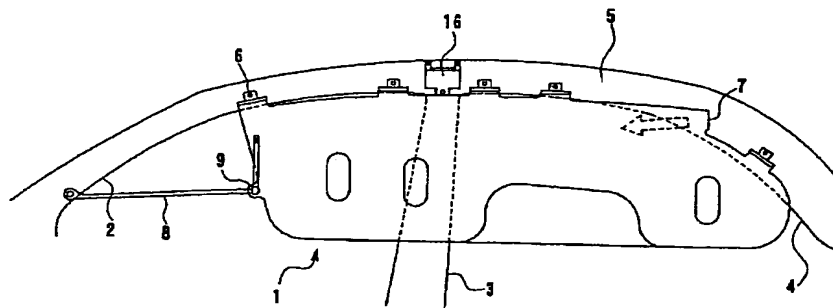
【符号の説明】

- 1 エアバッグ
- 3 センタビラー
- 5 サイドルーフレール
- 10 ヘッドライニング
- 10 下端部
- 11 ガーニッシュ
- 11a 上端部
- 12 脚部
- 13 先端部
- 15 曲折部
- 16 ブラケット

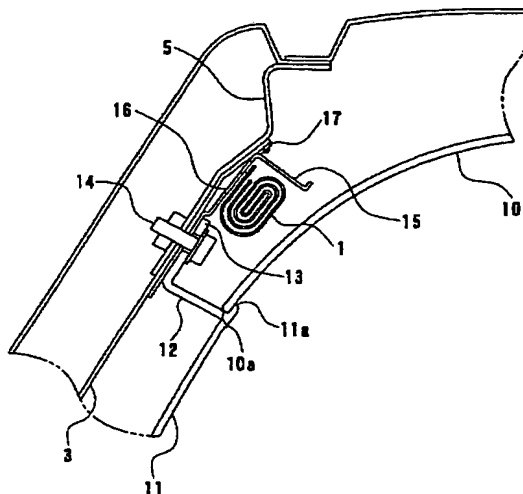
F 衝撃

\* S 隙間

【図1】



【図2】



【発明の効果】この発明によれば、ガーニッシュの上端部付近とビラーとが脚部を介して連結された状態になるため、ビラーが側面衝突の衝撃を受けても、ガーニッシュの上端部がビラーから離れることはなく、ガーニッシュの上端部と、押し開かれたヘッドライニングとの間に形成される隙間は広く確保され、エアバッグの下方への展開速度が向上する。ガーニッシュの位置を特別に車室内側へ位置させる必要がないため、乗員の車室内スペースを圧迫することがない。

【図面の簡単な説明】

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【図2】図1のエアバッグを折り畳んで収納した状態を示すセンタビラー上部の断面図。

【図3】図1のガーニッシュの上端部とブラケットを示す斜視図。

\*【図4】図2のエアバッグが下向きに展開した状態を示す図2相当の断面図。

【符号の説明】

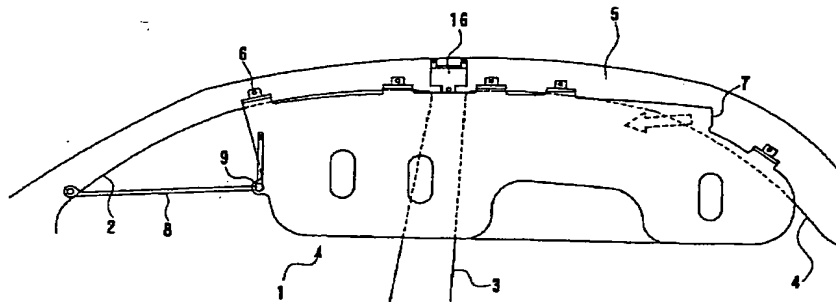
- 1 エアバッグ
- 3 センタビラー
- 5 サイドルーフレール
- 10 ヘッドライニング
- 10 下端部
- 11 ガーニッシュ
- 11a 上端部
- 12 脚部
- 13 先端部
- 15 曲折部
- 16 ブラケット

F 衝撃

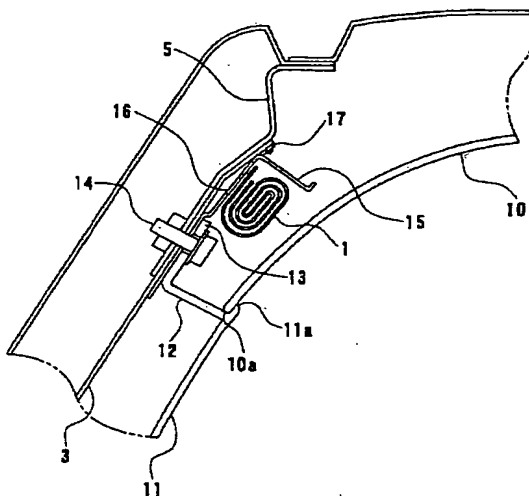
S 隙間

\*

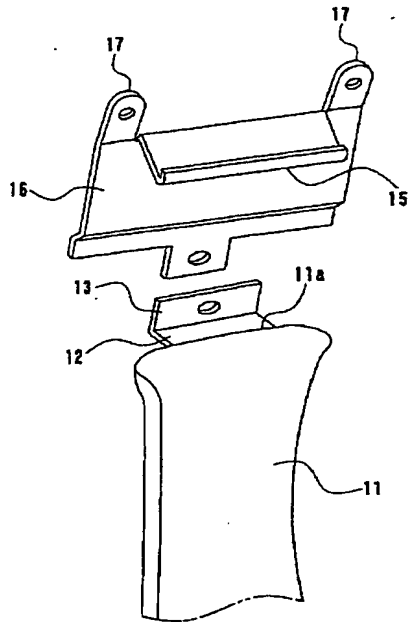
【図1】



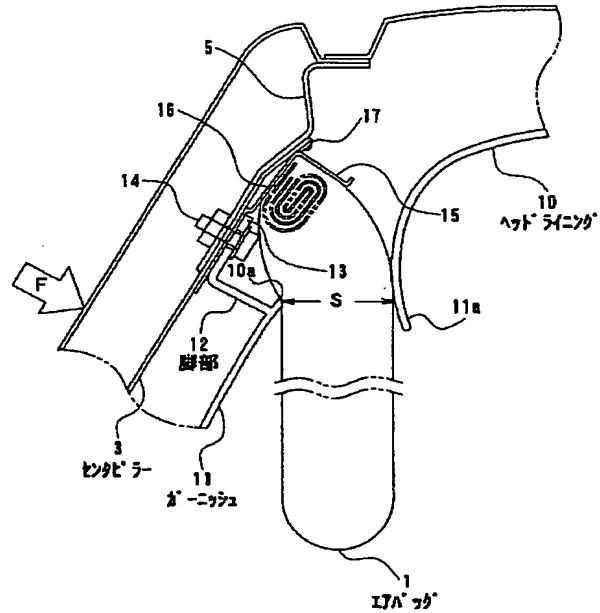
【図2】



【図3】



【図4】



フロントページの続き

(72)発明者 猪股 和幸  
静岡県富士市青島町218番地 日本プラス  
ト株式会社内  
(72)発明者 横山 亜紀  
静岡県富士市青島町218番地 日本プラス  
ト株式会社内

(72)発明者 青島 唯之  
静岡県富士市青島町218番地 日本プラス  
ト株式会社内  
Fターム(参考) 3D023 BA01 BB10 BD08 BE35  
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